# MODERN METHOD OF HANDLING TELEGRAMS

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THOUSANDS of telegrams are received and sent each day, but very few people know the way in which they are actually handled. Because absolute secrecy must be maintained in the telegraph service, the public does not have a chance to visit the offices and watch the force at work. With this in view, and a hope that the public will have a better understanding of telegraph practices and terms, this article was written.

The procedure which a telegram passes through is dependent on the size of the office from which it is sent. The most illustrative case and the one to be followed in this report is that of sending a message from one non-functional office to another via two relay offices.

A non-functional office is found in the small towns and cities. It does not handle sufficient traffic (incoming and outgoing messages) to warrant having a wire of its own to a number of other towns. It handles all of its traffic through a larger office called a relay office. The relay office has wires to all the non-functional offices within a certain radius, and also to other relay offices. Thus when a non-functional office gets a message to send, it is first transmitted to the relay office. If the message is destined to a town within a radius covered by that relay office, it is immediately transmitted to it. If not, it must be transmitted to a second relay office which does cover a radius containing the town to which the message is addressed. This second relay office then transmits the message to its destination.

Messages are brought to the office in several ways. Intermittent users usually come to the office and write out their message. More extensive users have a call system installed whereby a signal indicates to the telegraph office that the patron has a message for them. A messenger is sent for it. An increasingly popular method is to telephone them to the telegraph office. Oftimes private lines are installed for this purpose.

The filing of a telegram refers to where and at what time it was given to the telegraph company for transmission. This information is found on all telegrams and is transmitted free of charge.

The message once filed is immediately handed to the operator for transmission. The operator calls the relay station and transmits the message to an operator there, who gives his O. K. on receiving it.

If the non-functional office has considerable traffic to handle, a relay operator is assigned to their wire and does not leave it. If, however, the office has a small amount of traffic, it gets the attention of an operator only part of the time. The small office calls a relay operator to its wire by making a signal which lights a lamp in the relay office. This light must be answered within five minutes after its first lighting.

The relay operator "picking up" a lamp answers with the call of the relay station. The operator at the non-functional office then sends the message which the relay operator translates in his head and typewrites in complete form on a telegraph blank. Removing it from the typewriter he places it on a conveying belt which runs directly in front of him. At the end of the first belt the message drops onto another belt which carries it to a large table. Here girls sort the messages according to destination. Other girls take them to the proper wire.

The traffic between two relay stations is so great that many operators would be needed to handle it. The automatic transmitter and receiver, the multiplex machine, is therefore used. One machine takes the place of four Morse operators. The mux (multiplex) operator sits before a keyboard similar to that on a typewriter. To transmit a message it is only necessary to go through the form of typing it. As the keys are depressed holes are punched in a moving tape. This tape feeds into an automatic transmitter which actuates the receiving portion of the mux machine at the distant relay office by means of the holes in the tape.

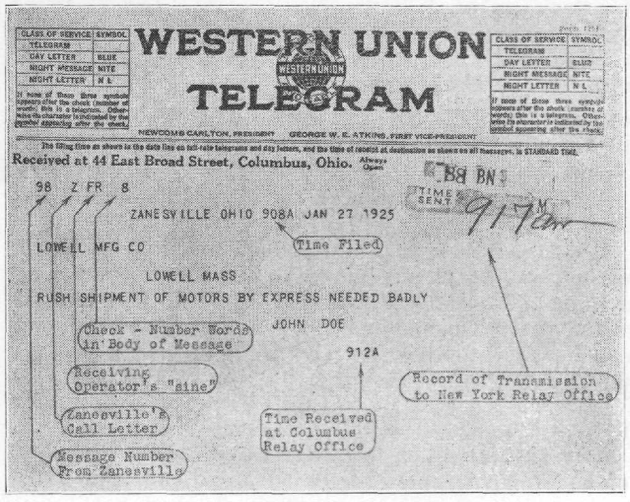
The incoming pulses from the mux machine of the first relay office cause letters to be printed. These letters correspond to those sent out from the first relay office. Thus when the key S is depressed in the first relay office a series of holes corresponding to S is punched in the tape. This tape running through the transmitteer causes pulsations corresponding to S to be set up in the circuit. The receiver at the second relay office is actuated by this pulsation and the letter S is printed corresponding to that pulsation. Thus the whole message comes out of the mux machine in printed form.

The message is taken from the mux machine to a large table. Here it is routed according to destination, and is taken to the correct wire. The relay operator calls the office to which the message is destined. When answered by the call of the non-functional office, he transmits the message and gets the other operator's O. K.

The non-functional office operator receives the message, typing it on a telegraph blank. It is taken to the delivery clerk whose duty it is to get it to the addresse.

The usual form of delivery is by messenger boy. This physical delivery finds greatest favor in the down-town business sections where the original copy of the message is often necessary. This method is not so well adapted for messages going to outlying points, for even the fastest messenger must spend many minutes delivering the message. In such cases the message is telephoned if possible, and agreeable to the recipient. Telephonic delivery of telegrams is immediate and many patrons request it.

Patrons often wish to know how long it will take their message to be delivered. This is no doubt a reasonable question, but one which cannot be answered with certainty. In fact the Western Union has a rule against promising any certain time of delivery. The average time for a fast telegram is from forty-five minutes to an hour. The distance the message "travels" has practically nothing to do with how long it takes it to get there. It takes no longer for an operator to send a



message from New York to San Francisco than from New York to Cleveland if he has a direct wire to each place. Messages often come through in fifteen minutes, but this exceptional service cannot be relied upon.

A record is kept of the message at each office it passes through. On this record also is the time, by whom, and over what wire it was received and sent from that office. This record is kept for one year.

The relay system described above is the one used by the Western Union Telegraph Company. It is the result of many years of practical experience in the speedy delivery of telegrams. Its effectiveness can be judged by the fact that a message sent from any one of the twenty-six thousand Western Union offices will be delivered at any other office within an hour or so. Of the thousands of messages sent every day it is a rare occurrence to have one come to fault in delivery. It takes the highest type of organization to accomplish this. American telegraph companies no doubt boast the truth in asserting that America's telegraph service is equaled by none.